



U.S. Department of Transportation  
Pipeline and Hazardous Materials  
Safety Administration



# Pipeline Safety Regulation for Small Operators in Colorado



Colorado PUC Pipeline Safety\PHMSA TQ  
Pipeline Safety Seminar  
March 2012  
Colorado Springs



## **Focus: Describe the “Theory” and “Reality” of pipeline safety for Colorado Small Operators**

### **THEORY:**

#### **Summary of the Current U.S. Pipeline Safety Regulatory Landscape**

- Legal/Regulatory Map
- Applicable Regulations (Part 192)
- Current and Future Regulatory Enforcement Philosophy

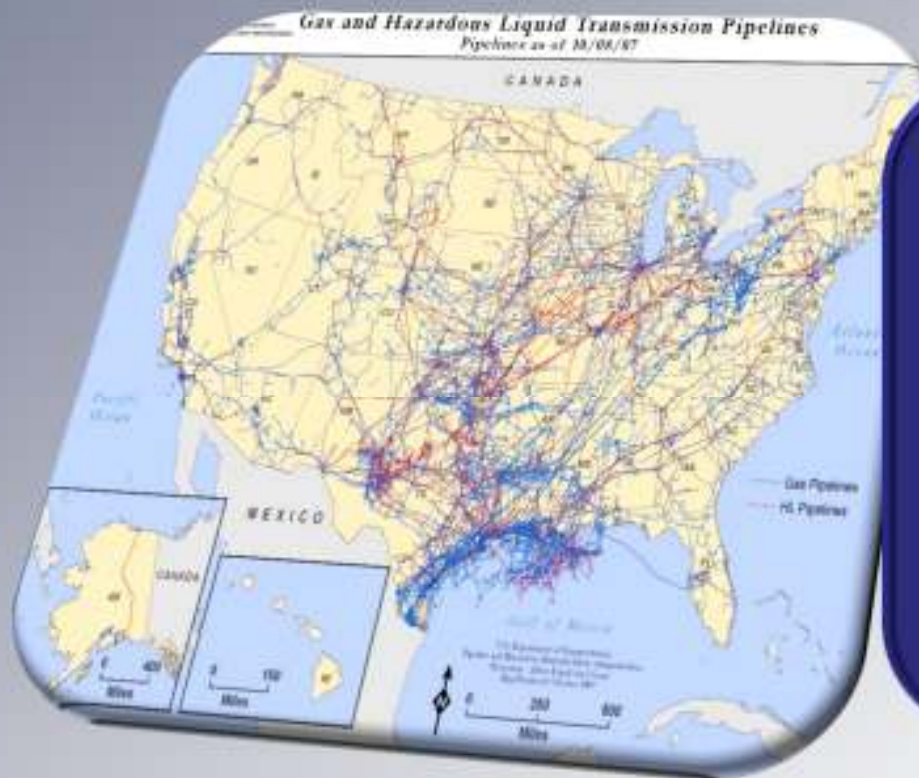
### **REALITY:**

**Pipeline Safety Snapshot: PHMSA’s, states’, and small operators**

**The 3 Small Pipeline Operator “MINIMUM MUSTS” – Leak Survey, Continuing Surveillance, and Emergency Response**



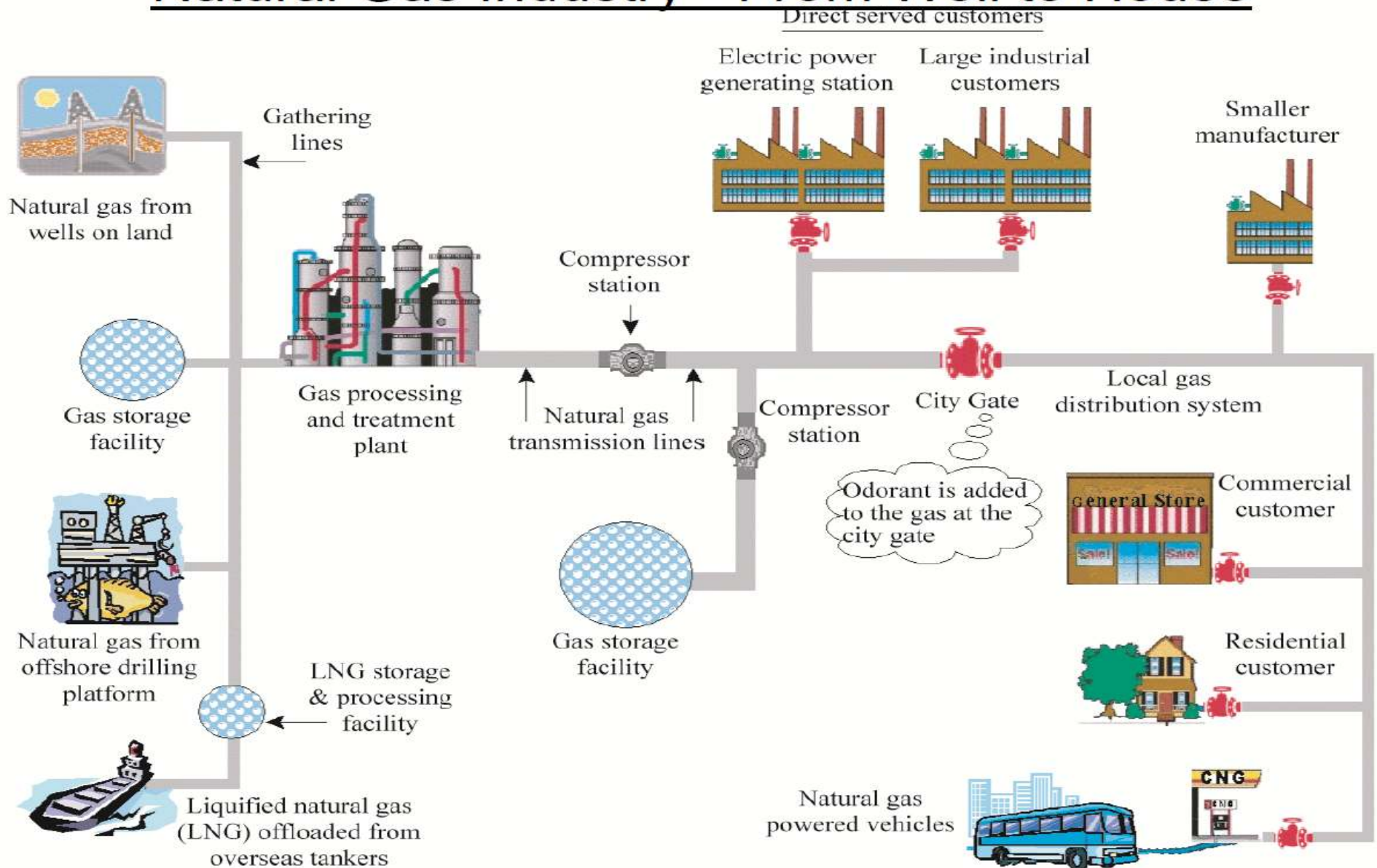
## The PHMSA Office of Pipeline Safety (and therefore Colorado GPS) Mission Statement :



“ To ensure the safe, reliable, and environmentally sound operation of the Nation’s **pipeline transportation** system.”



# Natural Gas Industry - From Well to House







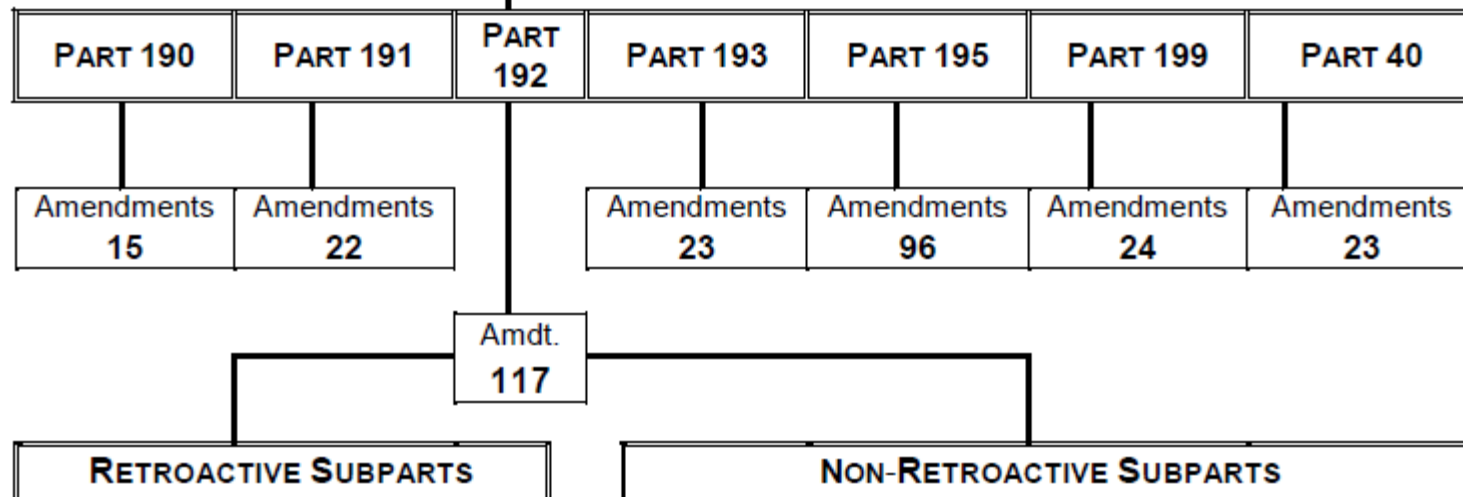
# Regulatory Background

- The Colorado PUC Gas Pipeline Safety Section (GPS) has a 60105 Agreement with the PHMSA's Office of Pipeline Safety (OPS); PUC conducts and carries out the inspection and monitoring activities of intrastate gas pipeline systems. These facilities include transmission, distribution, regulated gathering, master metered, liquefied natural gas (LNG), and propane (LPG) gas systems.
- GPS has very few state-specific regulations and is required by its agreement to adopt Federal pipeline safety regulations (specifically Part 192 in Title 49, Code of Federal Regulations, containing the minimum Federal safety standards for the transportation of gas and for pipeline facilities used for this transportation).



## PIPELINE SAFETY LAWS

1. Pipeline, Inspection, Protection, Enforcement and Safety Act of 2006 (PIPES)
2. Natural Gas Pipeline Safety Act of 1968, as amended.
3. Mineral Leasing Act (regulation to inspect on Federal lands).
4. Deep Water Port Act of 1974.
5. Section 5 of the International Bridge Act of 1972.
6. Outer Continental Shelf Lands Act.
7. Hazardous Liquid Pipeline Safety Act of 1979, as amended.





**Amdt.  
117**

**RETROACTIVE SUBPARTS**

- A** General
- I** Corrosion  
*Dates:* Jul 31, 1971  
Aug 1, 1971
- K** Upgrading
- L** Operations
- M** Maintenance  
*Dates:* Nov 12, 1970  
Mar 12, 1971  
Jul 31, 1977
- O** Pipeline Integrity Management
- P** Distribution Integrity Management

**NON-RETROACTIVE SUBPARTS**

- B** Materials
- C** Pipe Design
- D** Design of Pipeline Components
- E** Welding of Steel in Pipelines
- F** Joining of Materials other than by Welding
- G** General Construction Requirements for Transmission Lines
- H** Customer Meters, Services, Regulators and Service Lines
- J** Testing Requirements
- N** Operator Qualifications



# Key Regulatory Pieces to Small Operators

- Operations and Maintenance (inc. repair) Procedures
- Emergency Response Procedures
- Special programs: Operator Qualification (OQ), Public awareness (PA), Damage Prevention, Distribution Integrity Management (DIM)
- All of these require structures and resources for OVERSIGHT, SCHEDULING, and RECORDKEEPING.





# Regulation “Theory” Summary

- Very little formal recognition in Part 192 of differences between “large” systems and “small” systems; EVERYTHING applies to small systems = YOU ARE THE UTILITY.
- Regulations are becoming “program” driven, e.g.: Operator Qualification Program, Damage Prevention Program, Public Awareness Program, Distribution Integrity Management Program, etc.
- Programmatic regulations make for more specific inspection, but creates administrative burden on operators that increases as their manpower decreases.
- Risk-based theories (think liability insurance) are influencing pipeline safety environment (Both good/bad)



## **Current and Future Enforcement Philosophies: PHMSA versus Colorado PUC GPS**

- Federal structure has been very formalized based on large interstate pipeline environment: Infrequent inspections focusing on records and detailed program reviews followed by formal findings and fines. Expectations of “regulatory awareness” of all operators is high – all “equals”.
- Colorado PUC GPS structure has historically has attempted to tailor its inspections based on operator system size. Smaller systems often focused on substitution of formality for more frequent site inspections that examined system and management changes and leak history. Expectations of “regulatory awareness” in large operators has been high; lower for small operators. GPS has always differentiated amongst its operators – This approach has benefited small systems.



## **Current and Future Enforcement Philosophies: PHMSA versus Colorado PUC GPS (cont.)**

- PHMSA OPS seeking more uniformity and consistency among states – uniformity will be based on FEDERAL standards
- PHMSA OPS seeking evidence of appropriate punitive enforcement actions (e.g., states) from its state partners and emphasizes the need for regulatory awareness from all pipeline operators – “pretty much” all equals
- Ultimate result will be more Federal-like enforcement from GPS
- Newer regulatory initiatives focusing on “risk-based” philosophies – possibility for more operator flexibility w.r.t. regulatory responsibilities, but only IF OPERATORS “PROVE” THEIR INDIVIDUAL SYSTEM RISKS (DIM).



# Current and Future Enforcement Philosophies: PHMSA versus Colorado PUC GPS SUMMARY

- The pipeline safety enforcement landscape is definitely changing: More required formality from everyone (both regulators and operators), but possibly more intelligent and flexible (i.e., risk-based)
- Smaller operators are behind the regulatory awareness curve because of how they've been treated in the past
- Both GPS and small operators need to work together to make a regulatory pipeline safety model for small operators that fits *Colorado*.



# Pipeline Safety Snapshot: PHMSA

- Large interstate transmission pipelines: Gas and Liquids
- Oversight of State Pipeline Safety Programs
- High Profile Events with Large Releases (not necessarily casualties):
  - Bellingham, WA (3 fatalities, 1999); Interstate Liquid
  - Carlsbad, NM (12 fatalities, 2000); Interstate Gas
  - WY/CO Border (1 fatality; 2006); Interstate Gas
  - San Bruno, CA (8 fatalities, 2010); Intrastate Gas
- Incidents of this scale influence national pipeline safety policy: Control Room, TIMP, Damage Prevention, TIMP/DIMP





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# Pipeline Safety Snapshot: States

- Smaller intrastate distribution pipelines: Mostly Gas, some Liquids
- Typically focus on safety oversight of one or two larger operators with more smaller operators
- Lower Profile Events with Minimal Releases, but comparable fatality rates to “national” events.
- Incidents of this scale influence state pipeline safety policies (e.g., accelerated leak surveys/replacement schedules).



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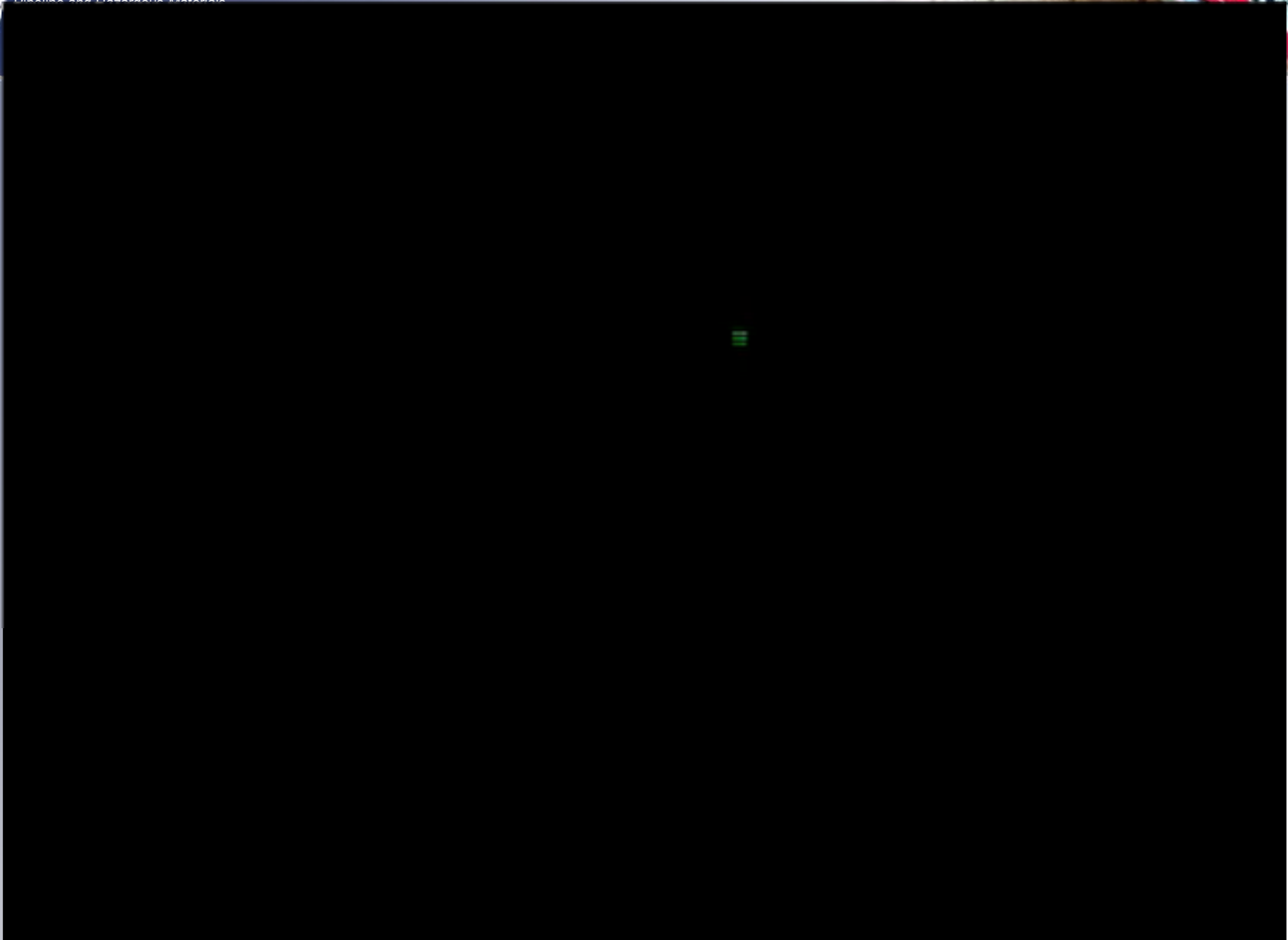




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Front View







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Pl  
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WENY-TV NEWS

# Twin Tiers Tonight

HOUSE  
EXPLOSION







# Pipeline Safety Snapshot: Small Systems

- Small distribution systems: Small municipal, master metered operators (MMOs), LPG systems serving > 10 customers – very diverse group
- NO FAILURE DATA specific to these operators, but typically labeled as “high risk” by regulators because of lack of pipeline operations experience
- GPS study of PHMSA incident data for past ~8 years reveals LOWER incident rate for typical MMO environment (manufactured homes) as compared with expected incident rate – why?...



# Pipeline Safety Snapshot: Small Systems (cont.)

- Lower operating pressures, simpler system design = tolerates failure better (i.e., more time to respond to potential problems)
- Small systems have slower growth that is more controlled (i.e., operator has distinct knowledge of all other infrastructure activities in their systems, e.g., sewer, water, electric, home improvements...lower incidence of outside force damages)
- There is an element of quicker response and sense of community responsibility generally; MMOs have high likelihood of obtaining mutual aid



# Pipeline Safety Snapshot: Small Systems (cont.)

- BUT...
- There is an identifiable deficit of pipeline operations experience in small systems
- There is an identifiable reluctance with some system owners to monitor, maintain, and repair these small systems = prefer to “operate to failure”





## Non-jurisdictional Incident Case (2/21/12)

**La Plata County, Colo. --** A home in rural La Plata County exploded Tuesday injuring a man, woman and child. The residence is located north of Lemon Lake, which is 16 miles northeast of Durango.

The explosion was reported around 8:18 p.m. by a local propane gas company worker. The worker was called to the address to check out a possible gas leak and discovered the damaged home.

One deputy described the home as "leveled", according to Dan Bender, spokesman with the La Plata County Sheriff's Office.

Emergency personnel found a man and a woman trapped inside the debris and an injured child in a vehicle.

"According to early witness reports, the child crawled to the vehicle for protection from the elements," said Vender. All three were flown to hospitals. Their conditions were not available Wednesday morning.



## The “Minimum Musts”

- Leak Survey;
- Continuing Surveillance/Patrolling; and
- Emergency Response

*Pipeline system operators must get these right. If they cannot, they need to remove themselves from pipeline operations.*



# Leak Survey

- §192.723 Distribution systems: Leakage surveys.
- Must be with an instrument – visual does not fulfill obligation (this is patrolling/continuing surveillance)
- Minimum 5-year cycle; 3-year cycle on steel systems with inadequate corrosion (cathodic) protection OR
- Leakage or other history that indicates need for more frequent survey (possibly annual)
- Leak survey is the foundation of a long-term failure prevention plan
- **Definitive indication of system integrity**





# Continuing Surveillance/Patrolling

- §192.613 Continuing Surveillance.
- §192.721 Distribution systems: Patrolling.
- Taken together – these regulations form the requirement for an operator to “know” their system.
- Continuing Surveillance and Patrolling supplement leakage surveys (occur continuously, semi-annually)
- Qualitative indication of system integrity



# Emergency Response

- §192.615 Emergency plans.
- Goal is “...to minimize the hazard resulting from a gas pipeline emergency.”
- Do you know what a “gas pipeline emergency” is for you?
- An emergency will vary from system to system and the experience of the operator
- **Do NOT:**
  - Be a bystander
  - Overextend your experience and resources
  - Underestimate the situation







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# Questions/Comments/Discussion

